



the **ILLINOIS ENGINEER**



Walker L. Cislak, President of The Detroit Edison Company and Chairman of the Hoover Medal Board of Award, presents the 1960 Hoover Medal to Dwight D. Eisenhower.

MAR 23 1961

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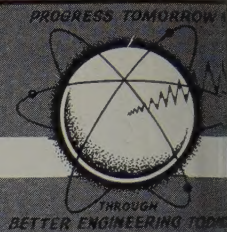
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THE ILLINOIS ENGINEER

ILLINOIS SOCIETY OF PROFESSIONAL ENGINEERS, Incorporated

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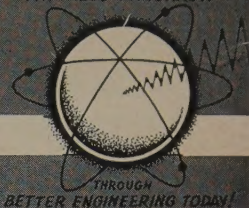
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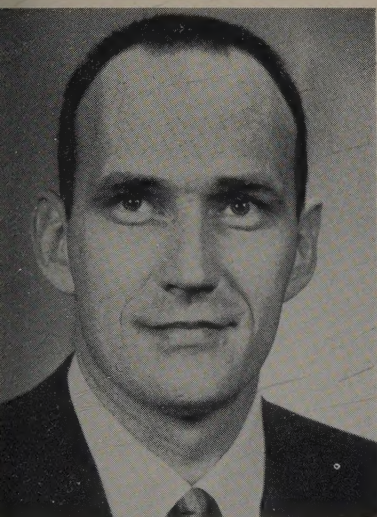
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RARIN' TO GROW

By R. D. COLLINS, P.E., I.S.P.E. Treasurer

ONE HUNDRED THOUSAND DOLLARS—This is the estimated gross income for the Illinois Society of Professional Engineers for the coming year. This figure represents an increase of \$15,000.00 over actual income received in 1960. A portion of this increase will be realized by membership growth, and a portion by increased advertising accounts for The Illinois Engineer. Also, some of this increase will be from chapter donations to the Illinois Society of Professional Engineers office equipment fund. The response of chapters to this program has been very gratifying. If your chapter has surplus cash that isn't being effectively used, why not donate it to the Illinois Society? This money will be put to work for you, your chapter and your fellow members.



R. D. Collins

Other figures readily measure the growth that has taken place within the last few years.

This is not the time, however, for the individual member to sit back and say "well done". No, the challenge is still before us. Our Society and all individual members should be "rarin' to grow". To effectively become the representative of the professional engineer in Illinois our society must increase its membership. Particularly, we must gain active working members from engineers in industry and from the electrical and mechanical fields. All engineers cannot help but benefit from an Illinois Society that truly speaks for the professional engineer in Illinois. To do your part GET BUSY—GET WORKING—GET A MEMBER.

After chapter dues are refunded and dues paid to NSPE the operating budget will be approximately \$59,000.00. Compare this with \$19,626.88 which was the operating expenses for the year 1956. From 1955 to 1960 the net worth of our society has increased more than 2½ times. From the Treasurer's viewpoint, this and

THE ENGINEERING OF VICTORY in ETO

an address given by

S. L. A. MARSHALL

Brig. Gen. U.S.A. Retired, Chief Historian
European Theater of Operations

at the

TWENTY-FIRST HOOVER MEDAL AWARD PRESENTATION

January 10, 1961

to

DWIGHT DAVID EISENHOWER

Mr. President, Distinguished Guests, Fellow Americans:

It is good to be here and we all know why we are met. The object is pay long overdue tribute to the former Supreme Commander of the European Theater of Operations, now the President of the United States, the beloved guest who *makes* our evening. But to note that fact, and to note the passage of 15 years that none of us will ever be able to live again, wish as we may, is to recall for the benefit of the engineering societies the story of the Irishman at the racetrack. His nag had come in last in a field of 16 and as he neared the finish line, his backer leaned over the rail and whispered in his ear: "Pray tell me, what took you so long?"

There is an arbitrary sliderule by which human accomplishment is measured. By its inexorable calculus, the honor done the President at this late hour is still relatively and by the numbers a more reasonable development than the privilege accorded me, that as a witness to his authority in the realm wherein you labor and which you well understand, I am called to speak.

The credentials for so doing are as you know them. That I here stand, in place of some other whose broader view of how the work of one person may re-channel the mainstream of human affairs might better grace the occasion is sheer accident. It just *happened* that I became the Chief Historian of the European Theater while the continent was our battlefield. The Army had kindly overlooked the fact that I had never passed a history course in my life. The rude truth is that I also had an engineering education wherein I learned at least one lesson well—that history and the correct use of English are non-essentials. It was easier to get *that* than to digest logarithms. So my task and my title came of the occult processes of a benign General Staff. And if that adjective seems out of place, I plead

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MICHIGAN AND OHIO'S REGISTRATION ACTS RULED UNCONSTITUTIONAL

... "I conclude that the police power clauses of these statutes are so vague and indefinite that they violate the due process provisions of Article II, Section 16 of the Michigan Constitution, Article I, Sec. 1 of the Ohio Constitution and the Fourteenth Amendment to the United States Constitution" . . . with these words U.S. District Judge Ralph Freeman declared the Registration Acts for Architects, Professional Engineers and Land Surveyors in Michigan and Ohio unconstitutional!

The ruling was handed down by Judge Freeman of Detroit on December 30 in conjunction with the case of Modern Engineering Co. vs. The General Electric Co. The opinion was rendered on a motion for summary judgment.

A legal venue was pursued by the defendant wherein, the Court allowed a hearing on a motion for "Discretionary Language." Inclusion of the discretionary language in the Order of the Court would permit appeal of the constitutionality question immediately. Non-inclusion of this language would deny immediate appeal until final adjudication of the contract and engineering firms service fees dispute, which is not anticipated for nine months to a year.

Judge Freeman, after hearing the motions for and against the inclusion of "Discretionary Language" on Monday (January 23) issued the Order to include the language on Monday, January 30.

General Electric Company will appeal the decision and has to file its appeal within ten days. The State of Michigan, thru the Attorney General's Office, has filed a petition for the right to intervene. The MSPE has also petitioned for the right to intervene and become a party to the appellate proceedings.

The constitutional question arose in conjunction with the case of Modern Engineering Service Co. vs. the General Electric Company. GE has engaged the Engineering Company to design an automatic starter blade process for its Ohio plant. The dispute arose over a portion of the total fee for services by the Engineering Company. As reported in the Judge's decision, \$146,040 of the amended contract of \$181,668 was paid pursuant to monthly progress reports. The last report of April 9, 1954 indicated the work was 99% complete. A final payment by defendant in the amount of \$15,000 was made February 2, 1955 which contained certain conditions. Although it is not clear when notice to proceed with the work was given, it seems that a completion date was considered to be November 1, 1953. Plaintiff was unsuccessful in automating all of the defendant's machines on the blade line and in March 1955 finally abandoned the project. Modern Engineering seeks to recover \$158,917 for the alleged extra work performed.

General Electric based a plea to have the lawsuit dismissed on the basis that Modern Engineering Service

PRESIDENT OF I.I.T. HONORED

John T. Rettaliata, president of Illinois Institute of Technology, has been named by the Chicago chapter of the Illinois Society of Professional Engineers as the "Outstanding Engineer of 1960" in the Chicago area.

Formal presentation of the award to Rettaliata in recognition of his selection as "Engineer of the Year" was made during the Chicago Engineers Week Banquet, held at McCormick Place, Thursday, Feb. 23.

Company was not registered according to Michigan or Ohio laws to practice professional engineering and was, therefore, offering an illegal service which would abrogate the contract.

The engineering firm challenged the constitutionality of both state laws and won the right to have the case tried "on its merits" of the service fee.

Judge Freeman ruled that the laws were "vague and indefinite" in defining "Professional Engineering" and therefore violated the "due process" of the fourteenth Amendment of the U.S. Constitution.

The Judge ruled that the purpose of the Act to protect the public, safeguard life, health and property is set forth in the preamble of the Act. The use of the words "wherein the public safety is involved" in Section 2 of the Act which defines professional engineering is not a reiteration of the purpose of the Act, but is part of the definition of professional engineering. Since this Act is a criminal statute, violations of which are punishable by fine and/or imprisonment, its wording must be strictly construed. Judge Freeman concludes that the meaning of the clause wherein the public safety, welfare, or the safeguarding of life, health, or property is concerned (or involved) is impossible to determine, because the standard for construing those clauses is not reasonably clear . . . What is meant by the word, "the public?", the Judge asked. "Is it the individual who comes to do business with the plaintiff, or is it a lot of people, or something that the end result may affect a lot of people?" . . . "It would be impossible, it seems to the court, for an engineer to determine whether or not he is covered by the statute."

Several other very important rulings, as regards the interpretation of the Act, delivered in conjunction with the summary judgment, are: (1) that the Michigan statute embraces only one object which is expressed in its title and, secondly that the Modern Engineering Service Company was not covered by the exemption in the Michigan Statutes. (In other words, the work performed by Modern Engineering was professional engineering.)

The MSPE, MSA, and MSRLS are alertly following the developments and cooperating in the legal activities affecting the professions. The Ohio Society is also actively following developments and has been kept advised promptly on the proceedings as has been the National Society thru the State Central Office.

FEES AND SALARIES

COMMITTEE ACTIVITY

By WILLIAM F. BLANK, *Chairman*

Abruptly—Almost before being informed that I was the Fees and Salaries Committee Chairman for Operation Year 1960-61, I was roused from professional society inactivity in form of Illinois Society of Professional Engineers Board of Direction Motion A-76.25—

"A study of salaries of all Engineers in State Government be reviewed by our Fees and Salaries Committee and that they come back with a report for our June (1960) board meeting, recommending action that should be taken in connection with the improving of the salary scale of said Engineers."

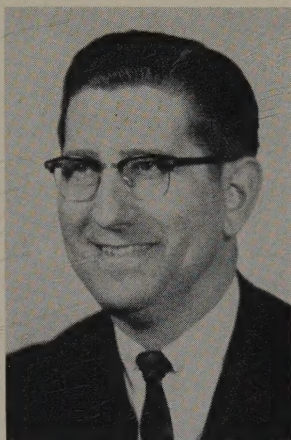
What appeared to be a task of monumental proportions to the committee and their inexperienced chairman actually turned out to be a boon in disguise. Within a short period the committee discovered their duties, sources of detailed data necessary for this type of committee work, and—how little we knew.

The purpose of this writing is threefold; a brief report of committee activity and action, "random thoughts" relating to fees and salaries emanating from committee discussions, and recommended tasks for present and future fees and salaries committee operations.

Report of Activity

Salaries. Studies necessary to satisfy Motion A-76.25 affected all activity, directly and indirectly. Action started on May 21, 1960 at an informal meeting of the Chairman and two members interested in the results of this motion; Mr. Floyd Birt, Chairman of the I.S.P.E. Highway Functional Section and Mr. Gilbert Henning, member of the I.S.P.E. Highway Function Section Executive Committee. Formal committee meetings were held on June 22, 1960 and September 24, 1960. Mr. R. C. Hahn (I.S.P.E. member) and Mr. Ed Brooks, interested members of the Illinois Association of Highway Engineers, attended the June meeting. On September 10, 1960, the chairman presented the results of a preliminary study covering Motion A-76.25 to the Board of Direction Meeting at Bloomington.

Briefly this study covered; personnel affected (five departments of the state government), background information, type of action that could be taken together with factors considered, source of data used in study, presentation of facts and recommendations.



Wm. F. Blank

Action was taken by our President, based on this study and the data accumulated, in letters addressed to the following State Officials: Chairman, Illinois Civil Service Commission; Director, Department of Personnel; Chief Engineers of the Department of Aeronautics, Department of Public Health, and Illinois Commerce Commission; Chief Engineers of the following Divisions of the Department of Public Works and Buildings, Division of Highways and Division of Waterways; the Supervising Architect, Division of Architecture and Engineering, also a Division of the Department of Public Works and Buildings.

These letters submitted a summary of current data which included by grade:

1. "A Salary Schedule for Professional Engineers in Highway Departments" recommended minimum by the American Association of State Highway Officials.
2. A survey listing of the "Median income for all Engineers by Grade in the Central States Area" as determined by a survey of the National Society of Professional Engineers in 1958.

Salaries tabulated on both the schedule and the listing were projected by use of the U.S. Department of Labor "All Items Index" to January 1961.

Fees. No definitive action was taken on fee schedules or any satellite matters pertaining to fees.

An appraisal of past actions and reports of the committee notes that the Illinois Society of Professional Engineers and Illinois Association of Consulting Engineers Committees on Fees and Salaries have worked in unison on matters concerning fees. This seems like a logical approach since:

1. The advisability of having a single set of published fee Schedules for Illinois acceptable to all interested Engineering Professional Societies is apparent.
2. It is impractical for two or more closely associated Engineering Professional Societies to go their separate ways on the subject of fees which is of interest to all.

Collaboration on preparation of fee schedules has been discussed with members of the I.A.C.E. Fees and Salaries Committee and is the subject of a proposed policy task covered later in this paper.

Random Thoughts

Committee action and a record of work leading to it is usually dull reading. The idle thought, the off the cuff remark, the philosophy of an elder professional all make up the melting pot of ideas which becomes this dull reading. This melting pot of ideas or "random thought" is often more interesting. I have recorded a few "random thoughts" and their relation to fees and salaries with the intention that they may provide direction for future Fees and Salaries Committee activity.

(continued on page 9)

JOLIET CHAPTER HEARS ILLINOIS BELL EXECUTIVE

"The Engineer In A Changing World" was the subject of an address by Warren W. Schmalenberger before the Joliet Chapter of the Illinois Society of Professional Engineers. The talk highlighted the evening National Engineer's Week dinner at the Woodruff Hotel. Mr. Schmalenberger is assistant general manager, state area, for Illinois Bell Telephone Company.

Speaking before Society members and wives, student award winners, and members of the Engineer's Club from the Joliet Junior College, Schmalenberger sketched the rapidly changing world of technology and pointed out the type of engineer needed to meet its challenges.



**MATHEMATICS AND SCIENCE
AWARD WINNERS—JOLIET**

Left to right, seated: Thomas Cusick, Joliet Catholic High School; James Fornango, Joliet Township High School; David Earls, Joliet Junior College; Jean E. Latz, St. Francis Academy; Drew Castle, Counselor Joliet Junior College Engineers Club. Standing: Sanger Westphal, President Joliet Chapter; Warren Schmalenberger, Assistant General Manager of Illinois Bell Telephone Company, Principal Speaker; Robert Brown, Chairman of the Scholarship and Awards Committee.

"The engineer must become something more than an engineer," he said. "In one sense of the word, an engineer, after he becomes an engineer, must work himself away from engineering. When you realize that over one-third of all engineering graduates become administrators, you begin to see what I mean . . .

"Even though an engineer may start out as a specialist, he will very likely end up where his engineering will only be related to what he is doing.

"In this constantly changing world, new horizons are opening up. Other horizons are emerging for the first time. The engineer cannot afford to hold to too narrow a horizon too early or for too long. His interests and knowledge must branch out . . . the engineer must become a 'whole man.'"

Schmalenberger discussed some of the qualities of this engineer-manager of tomorrow: an enormous capacity for work, being concerned with the whole job; the ability to be leader and follower, knowing when and how to do both; a creative thinker; a pursuer of

REVIEW OF NSPE WINTER MEETING FEBRUARY 9-11, DES MOINES

The Illinois Society of Professional Engineers was well represented at the winter meeting of NSPE in Des Moines, Iowa. In attendance from ISPE were National Directors C. E. Missman, Melvin E. Amstutz, William S. Gray, and Executive Director of the Society, Robert J. Newbury.

MAJOR BOARD ACTIONS:

1. The Board of Directors of the 56,000-member engineering group voted at its winter meeting in Des Moines to petition the President to "allocate a portion of the funds set aside to aid Cuban refugees so as to assist such refugees to find suitable employment in their professional capacity insofar as such employment does not conflict with state laws governing the practice of their respective professions."

The National Society asked the President to aid the refugee engineers either directly or through appropriate non-profit organizations, experienced in the employment problems of émigrés in the professions.

2. To help alleviate the existing critical situation with regard to the inability of the military services to attract and maintain sufficient engineers in their commissioned corps to carry out their missions, the National Society Board voted approval of a four-point program which would:

- (A) Recommend to Congress an increase in basic pay of all officers in all branches of the uniformed services between the period of 0 to 7 years of service so that salary levels for engineer officers in the lower grades will be more favorably competitive with rates for engineering graduates in other fields of endeavor.

- (B) Support the passage of legislation which would authorize personal contracts with reserve officers to as-

(continued on page 6)

continuing education; a concern for the human aspects of the job; a strong interest and belief in public relations.

The engineer's emerging role as a moving force in society was pointed out. "We are living today in a culture which is being dynamically influenced by technology and engineering, where too often the social aspects of our culture are out of phase with this technological growth. The possibilities of the future are endless. Undreamed of things are in the offing. But they cannot come to fruition without relating them to the social influences on people for whom they are intended."

In speaking of industry's role in seeking new engineering talent, Schmalenberger said, "Of course, it would be a sad state of affairs if it was all take and no give." Industry must give a helping hand to privately supported higher education if it is to receive the quality of talent necessary to meet the challenges and demands of the decades ahead.

I.S.P.E. ELECTION RESULTS

The Tellers' Committee met at the Society office on the evening of February 27 for the purpose of counting ballots for the 1961 election. A total of 1,158 ballots were received from the 2,619 eligible voters. The following is a report of the ballot count:

For President

Harold F. Sommerschild.....	1,098
M. J. Alster.....	5
J. C. Fitch.....	1
J. Flood.....	1
Ray M. Golly.....	1
B. Muirheid.....	1
J. P. Rhodes.....	1

For Vice-President

Manuel Garcia.....	1,065
Louis A. Bacon.....	1,054
C. Dale Greffe.....	1,046
M. J. Alster.....	1
W. Berk.....	1
C. Bowen.....	1
E. J. Daily.....	1
D. Fowler.....	1
A. Freiman.....	1
R. Hahn.....	1
E. B. Hardwick.....	1
D. E. Houser.....	1
F. A. Kilcoin.....	1
J. S. Marsh.....	1
S. N. Powell.....	1
L. Rhodes.....	1
W. A. Russell.....	1

For Treasurer

R. D. Collins.....	1,101
M. J. Alster.....	1
C. Becker.....	1
C. G. Macklin.....	1

For National Director

Royce E. Johnson.....	1,075
F. Raymond Carroll.....	1,069
M. Amstutz.....	1
H. L. Brantley.....	1
R. Blichler.....	1
C. O. Crawford.....	1
J. Hudson.....	1
C. R. Ihlenfeldt.....	1
H. Marks.....	1
A. Osterling.....	1

For Illinois Engineering Council Representative

Kenneth E. Welton.....	1,092
H. W. Byers.....	1
C. O. Crawford.....	1
M. Garcia.....	1
R. Gates.....	1
H. M. Rayner.....	1
A. Sullivan.....	1
E. Thomas.....	1

Rejection of 34 ballots was based on the following reasons:

No name	26
Illegible writing	5
E-I-T	2
Affiliate	1

TELLERS' COMMITTEE, I.S.P.E.

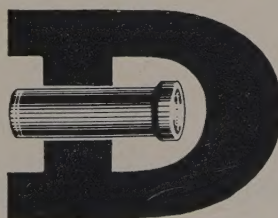
L. J. Collamore
R. L. Rosenberger
S. J. Trapani
Francisco Valdes, Chairman



Today's **compression-type Coupling cuts infiltration** to absolute minimum

Actual installations prove that infiltration can be reduced as much as 90% below specified allowance... by building your sewers with Dickey Coupling/Pipe. Made of a resilient plastisol, the Dickey Coupling

makes a tight joint that locks out ground water. Applied to Dickey Pipe at the factory, this Coupling comes ready to use. One firm push completes the joint. For real economy, specify Dickey Coupling/Pipe.



Providing improved sanitation for better living

DICKEY

sanitary salt-glazed clay pipe

W. S. DICKEY CLAY MFG. CO.

Birmingham, Ala. Chattanooga, Tenn. Kansas City, Mo. Meridian, Miss.
St. Louis, Mo. San Antonio, Tex. Texarkana, Tex.-Ark.

0286

If it's made of clay it's good... if it's made by Dickey it's better

(continued from page 4)

sure tenure on active duty of a specified period of years with provision for compensation in the event of this involuntary termination prior to the contract term.

(C) Support legislative authorization to provide flexibility in the Regular Officer—Reserve Officer ratio in certain selective cases where grade deficiencies exist under the present ratio of 50/50 for Navy and 40/60 for the Army and Air Force.

(D) Support the adoption of a professional program by the chief of each of the uniformed military engineer organizations which would encourage all engineer officers to attain a master's degree in engineering and to become registered under the laws of any state, territory or the District of Columbia.

3. The NSPE Board gave approval to the governing documents for creation and operation of the Institute for Certifying Engineering Technicians. (This program has been described in detail in the last two issues of the ILLINOIS ENGINEER).

4. The Board gave endorsement of Junior Engineers and Scientists Summer Institutes, currently in operation in many parts of the country.

5. THE NSPE BOARD also defeated a move to reconsider the previously adopted Model Law, on the grounds that state societies had lacked adequate opportunity to review it.

6. The Board gave approval of a change in Rules of Professional Conduct #49 and #50, barring competitive bidding for engineering work, and stipulating that any engineer approached and requested to submit a competitive bid should remove himself from consideration on the project in question.

Change Rule of Professional Conduct #49 to read: Competition between engineers for employment on the basis of professional fees or charges is considered unethical practice by all professional engineering groups. Any engineer who is requested to submit a competitive bid to an owner or a governmental body should remove himself from consideration for the proposed work.

Change Rule of Professional Conduct #50, second paragraph, to read:

Should the engineer be asked for a proposal to perform engineering services for a specific project, he should set forth in detail the work he proposes to accomplish and an indication of the calendar days required for its accomplishment. The engineer's qualifications may be included if appropriate. A statement of monetary remuneration expected shall be avoided until he has been selected for the proposed work.

Should the owner insist upon a statement regarding remuneration prior to the selection of the engineer, the engineer may designate the recognized professional society minimum fee schedule for the particular type of service required in the geographical area where the work is to be done.

NATIONAL COMMITTEE HIGHLIGHTS

BOARD OF ETHICAL REVIEW—Adoption of six cases considered since the last meeting pertaining to: Recruiting engineers, Conflict of Interest, Practice in other than major field, competitive materials—reduction of standards, competitive bidding—reduction of fee, and gifts. All cases will be reviewed in the American Engineer.

STUDENT PROFESSIONAL DEVELOPMENT—Welcomed Mississippi State University Student Chapter to NSPE.

RESOLUTIONS—Combined and had accepted two previous resolutions (Illinois and Minnesota) of similar character to urge the Federal Government and its agencies "in awarding contracts for professional engineering service including those for research and development or other contracts for professional engineering services, to require that the work be performed under the direction of registered professional engineers, and that the documents prepared under the contracts including proposals, reports, plans and specifications be certified and stamped by registered professional engineers who are in immediate responsible charge of the work . . .".

CONSTITUTION AND BYLAWS—Recommended elimination of Employment Practices Committee, and removal of present restrictions on payment of travel expense of national directors from societies outside the continental United States. Both recommendations carried.

(continued from page 1)

only that distance lends enchantment. The late Grantland Rice, called the Sporting Poet, was thinking as an Old Soldier when he wrote some years ago:

"The years go by. A man forgets

Old Barricades in a bitter fray.

He leans once more to the rolling drum.

It all looks good when it's far away."

But because of the company I keep this evening, it is not permitted me that I view a work of yesterday through the gently roseate haze that time provides. This is a survey report and not a eulogy. But it has unique complications. The theme was never meant for the brief fragment of an hour, or a series of lectures, or a volume, but almost one might say, for a library. Not being an expert in the science of miniaturizing the face of Nature or the march of civilization, I must defy an ancient canon of rhetoricians and open with an apology. The feat of compression—of doing justice to my subject in 20 minutes—is beyond earthly means.

We are considering tonight more than the moving of mountains, the changing of river courses and the harnessing of oceans to do work hitherto undreamed. These things were all monumental enough. Measured in purely mathematical terms, the invasion and liberating of Western Europe was the most giant labor ever committed to man, nigh infinitely larger than any prior engineering project given single direction. Yet this

as its lesser aspect. A stricken land had to be healed and its sorely oppressed humanity had to be vouchsafed fresh, firm foundations for a productive life under freedom while the armies moved in and through. Their means of movement had to be restored, their factory systems re-energized, their mines cleared, their ports made whole again. These things were done.

Because of them, world freedom still has a future. The more sublime values are but briefly mentioned in passing. As for the rest of it, I am encouraged to go ahead by two reflections. The story of the Creation is told in Genesis in ten words. Next, on one evening in Frankfurt, the Supreme Commander gave me his only instruction on how the history of the Theater should be brought along. He said: "Determine what is true, and we will settle for that. Where my own work is concerned, keep it brief and avoid use of the perpendicular pronoun. It doesn't agree with my system of command." Was there ever before a soldier of comparable stature who freed wholly the hand of the chronicler, stood selflessly on the record and abided by the principle that the people were entitled to know all? The answer is "No," and it is a personal obligation in this presence to say for the first time publicly that history's debt to him is incalculable.

In this day when the word "megaton" is familiar to a child in the fourth grade, when cataclysmic force, so concisely packaged, so that a few hands may deliver it

to wipe out the treasure which millions of men have created through centuries, it is not easy to make seem impressive the same figures which on V-E day marked a new Everest in human attainment. That is the more reason for pondering them, since we know, even as we reach for the stars, that man's hope lies in the direction of constructive toil here on earth.

To dig the Panama Canal and free it of rockslides over many years required the movement of 72,306,000 tons of earth. This was localized displacement, steam shovels picking it up here and laying it down there. To operate the European Theater through one year of war on the continent, and to stage invasion from the United Kingdom, entailed the movement of 73,737,680 long tons, most of it transported across oceans and narrow seas, amid peril. Roughly two-thirds of this tonnage went from America to continental ports and from there had to be disposed forward by the command over roads in disrepair, railways at first nonoperable and pipelines initially nonexistent.

Now regard the 1917-18 AEF—a giant in its own day. It got by on 8,346,342 long tons, more than half of them locally procured. There was no first task of massive restoration and reclamation. It boarded a rail and road system already intact, serviced and operated for the most part by our French ally. Of its total engineering experience, the legacy to the ETO in 1944 was little more than is to be found in the imagination

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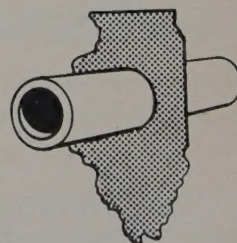
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of a road repair crew.

Of how imagination soared, and hopes became dashed, there is no better illustration than the creation and fate of the two artificial harbors, called the Mulberries, which were to facilitate across-the-beach movement of freight until a port could be won and made of use.

Mulberry A, at Omaha Beach, was to avail a harbor of two square miles, with moorings for 19 ships. Its main elements were the concrete caissons, called "Phoenixes," 200 feet long, weighing 6,000 tons apiece; the "Bombardons," or 95,000-cubic foot breakwaters; and the five blockships to be sunk in two fathoms of water. It took 158 seagoing tugs to tow these parts from Britain to Normandy as the invasion started.

Work began on June 7. Twelve days later it was almost finished. Then started the great storm, swelling to hurricane power over four days. At the end, Mulberry A, the 1,500,000-ton monster, was a total wreck and loss, claimed by the sea. Nor was that all. In numbers of small ships drowned and in tonnage of materiel carried to the bottom, the losses approximately equalled the disaster to the Spanish Armada under the Duke of Parma in 1588.

Still, across-the-beach, unloading proceeded and sustained operations. This, though cargo coming from the United States had been stowed on the assumption

that Cherbourg would be ready to receive it, and was not therefore pallet-loaded. During the first 60 days, there had crossed the beaches 912,805 men and 315,427 loaded vehicles under conditions which, according to past military theory, made impossible the mounting of main operations in war.

Cherbourg, capitulating on June 27, thirteen days late by the timetable, was supposed to be ready within three days to receive its first ship, and instead, took three weeks. Its facility had been systematically wrecked by the Germans, through the sinking of 109 vessels in the narrow channels, the concrete-loaded obstructions being so placed as to take advantage of tidal variations ranging from eight to 18 feet. LSTs or tankers might enter harbor at high tide then find themselves rocking on a mined barge at low tide. It was July 24 before the first bulk gasoline could be unloaded dockside at Cherbourg, August 9 before the first Liberty ships could berth.

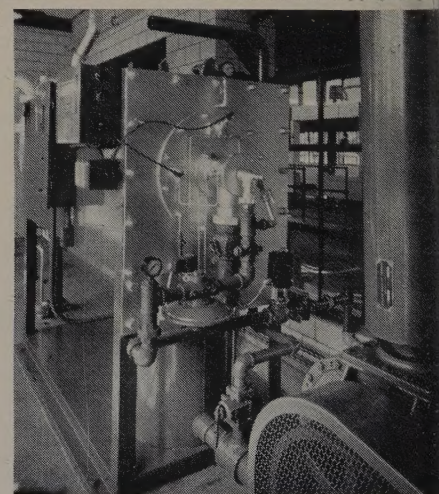
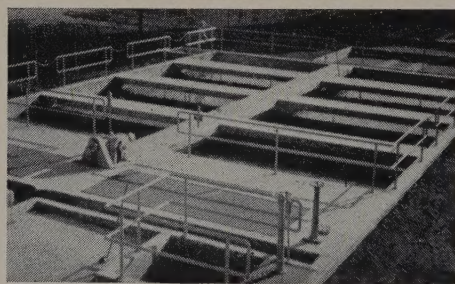
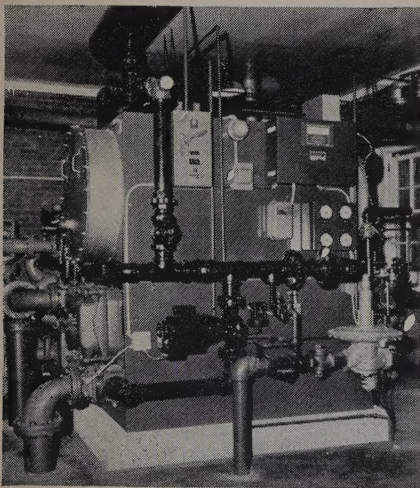
The demolition and freeing of that first harbor foreshadowed the shape of things to come. Compounding the engineering task far beyond anticipation, the sabotaging of the inland waterways system of France and Belgium, by the blowing of locks and bridges coincided with the arrival of the highest flood waters in 40 years. This came in the late summer when the Eisenhower armies had broken out and the canals and rivers

(continued on page 12)

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Top—Rectangular Collectors at Morris; Baxter & Woodman, Consulting Engrs.

Right—CARBALL, CO₂ producer at Moline; Greeley & Hanson, Consulting Engrs.

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(continued from page 3)

Salary Reimbursement for—

Personal Technical Skill or Personal Ability?
 State License or An Engineering Creation?
 Position Title or What You Did or Can Do?

Of course the former in each instance represents a technical skill which possibly has its salary price; the latter, the mark of a professional, cannot be devalued by price. The engineer in many instances particularly in the middle professional grades bounces back and forth over the ephemeral line between the price of technical skill and personal ability. Fix a minimum price for technical skill, Yes!—Fix a price for personal professional ability, No! Our job as professionals is to lift our personal professional ability on our own bootstraps and our success will be regarded singly and as a group.

Do Not Consider Salaries Without Considering Fees.

Engineers cannot price themselves out of business or into an inferior product whether they be part of government, or the free enterprise fields of consulting, manufacturing, utility, or construction.

Young professional wonders—why a survey of comparative salaries covering Doctors, Lawyers and Engineer professionals cannot be made to determine our relative income position? This comment reflects the thought that income levels today, of engineer professionals, do not recognize our contribution to society compared to that of other professional groups.

Effects of Salary Schedules—Must be considered with respect to all branches of engineering and all fields of operation; branches including civil, mechanical, electrical, chemical, etc., and fields covering Government, Consulting, Industrial, Utility, Education and Construction.

Other Considerations—Salaries, Salary Schedules and their comparative studies should also consider:

Fringe Benefits: Including in part; life insurance, hospitalization, pensions, paid vacations and sick leave, profit sharing, bonus, stock options, use of employer's car.

Position Descriptions: Including duties and responsibilities.

Professional Recognition: By salary adjustments for recognition of outstanding ability, merit, job performance and responsibilities.

Government Career Engineers: Recognition of the loyalty of Government Career Engineering professionals.

Job Security: Is the job in a free enterprise "risk" operation or is it a position not subject to the fluctuations of employment and income possible in such operations? Our capitalistic free enterprise system appropriately rewards those successful in such operations in proportion to the risk.

This scattering of comments is probably idealistic and tinged with thoughts on professionalism. However, their bearing on fee and salaries, particularly in the area of studies and comparisons, should be apparent.

Recommended Tasks For Fees & Salary Committee

Short Term—1960-61

1. Establish a permanent Fees & Salaries Committee file to provide for continuity in policy, operation and record.
2. Revise and publish up-dated Schedule of Minimum Salaries.
3. Formulate new policy for Board of Direction Action.
 - (a) Policy covering the basis upon which salary schedules are to be established.
 - (b) Policy covering the basis upon which Salary Studies are to be prepared and used.
 - (c) Policy covering operational liaison for collaboration on fee schedules between I.S.P.E. Fees and Salaries Committee and Fees and Salaries Committee of other interested professional societies in Illinois.
4. Act on special assignments received from the Board of Direction.

Long Term

1. Revise and Publish Fee Schedules.

Consider the use of the Founder Society Schedules adapted and supplemented as appropriate for the State of Illinois.

Consider supplements to the fee schedules to include definitions of engineering services, in the various fields of "engineering interest", for the purpose of adjusting fees above or below those established by the basic fee schedule curves.

2. Supplement "Recommended Minimum Salary Schedule" with schedule of salaries for the engineering technician grades proposed by the National Society of Professional Engineers Certification Program for Engineering Technicians and Certified Engineering Technologists.

The opportunity to report to my fellow professionals is appreciated. I am grateful for the assistance given by President L. D. Hudson, Vice President M. Garcia, Committee members F. H. Wells, W. L. Hooker and F. D. Birt, and interested member R. C. Hahn. I sincerely hope that this writing will interest some of our capable members enough to request active participation in the work of the Fees and Salaries Committee.



HOTEL PERE MARQUETTE – PEORIA

WEDNESDAY—APRIL 19**THURSDAY—APRIL 20**

9:00 A.M. FIRST SESSION—HOUSE OF DELEGATES—Ballroom
Presiding: L. D. Hudson, ISPE President

12:15 P.M. NOON LUNCHEON—LaSalle Room
Presiding: L. D. Hudson, ISPE President
Invocation—awaiting confirmation
Welcome—awaiting confirmation
KEYNOTE SPEAKER—Lawrence M. Lew, Chairman of Political Science Dept.,
Bradley University

2:00 P.M. SECOND SESSION—HOUSE OF DELEGATES—Ballroom
Presiding: L. D. Hudson, ISPE President

4:30 P.M. ADJOURN SECOND SESSION

5:30 P.M. COCKTAIL HOUR—LaSalle Room
Sponsors: Streator Clay Pipe Company and American Vitrified Products Company

6:30 P.M. BUFFET DINNER—BALLROOM

9:00 P.M. SPECIAL ENTERTAINMENT—"NIGHT CLUB
ATMOSPHERE"—Ballroom
"SPOTLIGHTS" ORCHESTRA



0:40 P. M. BILL HOULIHAN—Master of Ceremonies
"MERKEL-FORD DANCERS"—7-girl dancing team
ACROBATIC DANCER—Jeri Feldman
ADAGIO DANCERS—Howard Borton and Merian Carlson
PANTOMIME ACT—Penny Sherman

MID-NIGHT: First Day of Convention Closes

FRIDAY—APRIL 21

9:00 A. M. ISPE FUNCTIONAL SECTIONS MEET

9:00 A. M.- BUILDING CONSULTANTS, STRUCTURAL ENGINEERS, ENGINEERS-IN-PRIVATE PRACTICE MEET JOINTLY

SPEAKER: DONALD SCHNACKE, Secretary-Manager, Kansas Consulting Engineering Section.

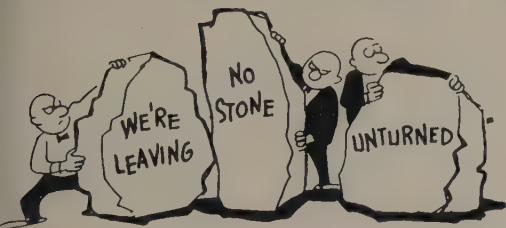
Each section to meet separately following address.

0:45 A. M.- HIGHWAY ENGINEERS, ENGINEERS-IN-INDUSTRY, LAND SURVEYORS MEET JOINTLY

SPEAKERS: (First Speaker Awaiting Confirmation)

JOHN E. JANSSEN, Research Section Head, Minneapolis-Honeywell
Regulator Company

Past President, Honeywell Engineers' Club and MSPE Engineers-in-
Industry



Each Section to meet separately following addresses.

2:30 P. M. LUNCHEON—LaSalle Room

Presiding—H. F. Sommerschild, ISPE President-Elect

Invocation—awaiting confirmation

SPEAKER: NOAH HULL, President, National Society of Professional Engineers

Presentation of CHAPTER PUBLICATIONS AWARD

2:30 P. M. THIRD & FINAL SESSION—House of Delegates—Ballroom

Presiding—L. D. HUDSON, President, ISPE.

Functional Sections Reports—Legislative Reports

Presentation of New Officers

4:30 P. M. ADJOURN HOUSE OF DELEGATES.

6:00 P. M. COCKTAIL HOUR—LaSalle Room

Sponsors: ILLINOIS CONCRETE PIPE ASSOCIATION AND PORTLAND CEMENT ASSOCIATION

7:00 P. M. ANNUAL BANQUET—Ballroom

Presiding—L. D. HUDSON, ISPE President

Invocation—awaiting confirmation

SPEAKER—awaiting confirmation

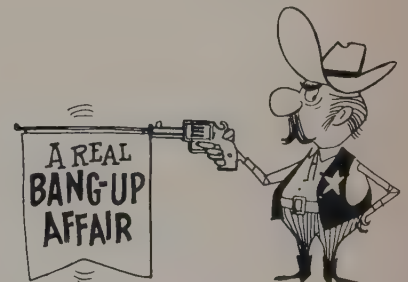
PRESENTATION OF ILLINOIS AWARD

PRESENTATION TO PAST-PRESIDENTS

Special Entertainment: RON PILON—Comedian

0:00 P. M. DANCING TO BILLY HILL'S ORCHESTRA—Ballroom

MID-NIGHT: Second Day of Convention Closes



SATURDAY—APRIL 22

8:30 A. M. to Noon: I.S.P.E. BOARD OF DIRECTION MEETING—Parlor B

THE LADIES' CONVENTION SCHEDULE

THURSDAY—APRIL 20

- 8:00 A.M. Registration—Lobby—Hotel Pere Marquette
Hospitality Room Available for Rolls and Coffee
- 10:30 A.M. BRUNCH—CARROUSEL ROOM
THEME: "NAME THAT TUNE" . . . Prizes to be awarded
- 12:30 P.M. CARDS—CARROUSEL ROOM
THREE OPTIONAL TOURS TO BE CONDUCTED:
1. TOUR OF HIRAM WALKERS
2. TOUR OF ART & SCIENCES' DISPLAY
3. GLEN OAK PARK ZOO AND CONSERVATORY
- 3:30 P.M. TEA—ILLINOIS VALLEY YACHT CLUB
- 5:30 P.M. Join With Men for Evening Program



FRIDAY—APRIL 21

- 8:30 A.M. REGISTRATION—Lobby—Hotel Pere Marquette
- 10:30 A.M. TOUR OF "JUNCTION CITY"—Peoria's New Shopping Center
- 11:30 A.M. REFRESHMENTS (Optional)—VONACHEN'S JUNCTION
- 12:30 P.M. LUNCHEON At a Peoria Country Club
THEME: "THIS IS YOUR LIFE"
PROGRAM: BEA HARRIS—Palace Gift Shop. Prizes to be awarded
- 3:30 P.M. TOUR OF PALACE GIFT SHOP
Shopping in Downtown Peoria—Optional
- 6:00 P.M. DINNER DANCE

(continued from page 8)

had to be freed for the movement of coal to the forces and to civil populations. Four main systems were cleared of wrecked bridges, sunken ships and houses tipped over into the canals. On the Le Havre-Paris waterways, the Seine was soon open to ocean-going traffic as far as Rouen; it was late November before the first loaded barges made Paris. On the Albert Canal between Antwerp and Liege, 21 highway and railroad bridges had been wrecked to bar passage, and every lock and footbridge had been dynamited.

The reclamation, begun in October, had two phases. The first object was to clear the canal for 600-ton barges, the second, for 2,200-tonners. At Veldwezelt, the cantilever bridge had been dropped in such a way that nearly all of the 208-foot structure was under water. This was the worst obstacle. Steam hoists couldn't budge it. Eight jacks, four of them 100 tons and four of them 50 tons, aided by steam engines and steam hoists, at last got it to its original 52 feet above the canal. It was January 15, 1945, when the great waterway reopened to traffic.

Because of the demolitions, the floods and the freezes, fuel against the early winter was carried to Paris mainly via a rail system restored by Eisenhower engineers. During the final week of December, 1944, coal so provided the city measured 88,292 tons.

By the end of that year, electric power consumption in Paris had reached 73,342,220 kilowatt hours per

week. That was slightly above the output for the corresponding period in 1938, the last season of peace. As to how this miracle was achieved, despite hell and high water, some of the guests of the evening, who then labored as Eisenhower engineers, are best qualified to speak.

By mid-January, the waterways were mainly freed again and barge traffic could deliver to the city a nearly normal coal flow of 12,500 tons daily. However, all present who knew Paris that year, before the chestnuts blossomed, will attest that she was no Garden of Eden, and no matter how they change her, we don't care to remember her that way.

This seems the moment for railroad talk. The thoroughness of German key demolitions, plus the effect of Allied bombings, is barely reflected in these figures: the engineers had to restore 4,780 miles of double track, 2,050 miles of single track and reconstruct 240 major railroad bridges. By the end of August the revitalized rail system had 750 miles of track; but it was of a kind that no states-side engineer would have approved. Craters made in roadbeds had been hastily refilled. The improvised bridges endangered any train going more than 10 miles per hour. Up till then, American locomotives had not arrived in any number and experienced operating personnel were in short supply.

The shortage of rolling stock and of locomotives

ved a limiting factor till the end. The Allies had originally planned to ship 50,000 freight cars to the continent: 20,000 got there during 1944. There had been in 1,200 locomotives from the United States. But there were days in the high crisis of the fighting when as many as 800 trains were held up for lack of motive power. When occurred the extension of movement into Germany, and thousands of cars rolled east to sustain the armies, the Supreme Commander became concerned over the dire effect on the civilian economy of the liberated peoples, and intervened to achieve a balance. In the same way, he had sought, and been given supra-national authority over all coal distribution. It remained his until three months after V-E Day. Supreme Headquarters required a section of 400 French, Belgian and Dutch officers and men for this function alone.

So the picture of a Theater surfeited with riches and with large reserves of engineering means is hardly accurate. Some of its brightest strokes were scored almost on impulse, of calculations made by-guess-and-by-od. Take, for instance, the rebuilding of the Franches-Laval-Le Mans rail line, requested on August 1944. Five engineer general service regiments were thrown to it, and built the new line in 48 hours because it was essential to General Patton's advance. As part of their work they had to install seven railroad bridges.

There was no thoroughfare anywhere leading across France in the hour when Normandy was beached. To afford a path for the armies and reunify the tissues of civilian Free Europe's workaday existence, 223 major highway bridges had to be reconstructed or replaced. More than 500 other bridges required repairs and maintenance. By late January, 1945, 2,100 miles of highway had to be given special engineering attention because of the original damage, compounded by the winter freeze and thaw. Overall, 7,476 miles of highway fell within the military network to be supervised and maintained by its engineers. That would throw a girdle thrice across the United States.

Above and beyond the work of salvage and of rescue was that something extra added—new to war and to Europe—the construction of the double POL pipeline system. The minor line was only 37 miles long, but going thickly and was doubly or triply piped. The major line was started the day Cherbourg fell and by mid-April, 1945, its terminus was at Mainz on the far bank of the Rhine. The major line was 1,500 miles of 6-inch pipe and had 201,361 barrels of storage capacity.

Time does not permit going into the details of main line construction, port rebuilding, etc., etc. The dry statistics would still afford but a faint echo of the mountainous labor done. Toward facilitating it, the Eisenhower engineers used on a large scale for the first time in warfare three types of machinery which revolu-

tionized the logistical support of armies. These were the giant earth-movers, the carry-alls and toun-a-pulls and the great cranes weighing up to 60 tons. They also used concrete mixers capable of turning out 34 cubic feet of material per minute—four times the volume of any previously used in military projects.

Viewed as a drama, the engineering contribution to Crusade in Europe, starting with the gradual buildup, moved to its own spectacular climax after the armies drew abreast of the Rhine. Except at Remagen, for a few days, the other spans across that broad inland artery and great barrier were down. Fifty-seven highway bridges were thrown across the Rhine, 52 of them by the Eisenhower engineers. The main fixed bridges were at Wesel, Cologne and Mainz. This great lattice had been in planning since autumn, 1944, and by V-E Day most of the bridges had already been refolded and tucked away, having filled their purpose.

But there were still other rivers to cross and there will be more in future. What was wrought in Europe is not only for the archivists so long as the possibility—nay, the certainty—remains that in time to come Americans must revivify the essential spirit which energized the work that we tonight honor, if their country is to avert, or come through, yet greater emergencies. So to close there are no more fitting words than those of the late Justice Holmes: "Sooner or later the race of man will die. But we demand an eternal record. We have it. What we have done is forever woven into the great vibrating web of the world. The eye that can read the import of its motion can decipher the story of all our deeds, of all our thoughts. To that eye, I am content to leave the recognition of the work of this great head and heart."

Thank you and goodnight.

THE HOOVER MEDAL

THE HOOVER MEDAL, founded in 1929, was instituted to commemorate the civic and humanitarian achievements of Herbert Hoover, and the first award was made to him in 1930.

The medal was founded and perpetuated by the trust fund established by Conrad N. Lauer, of Philadelphia. It is held by The American Society of Mechanical Engineers and is administered by the Hoover Medal Board of Award consisting of representatives of four national societies - - the American Society of Civil Engineers, the American Institute of Mining, Metallurgical, and Petroleum Engineers, The American Society of Mechanical Engineers, and the American Institute of Electrical Engineers.

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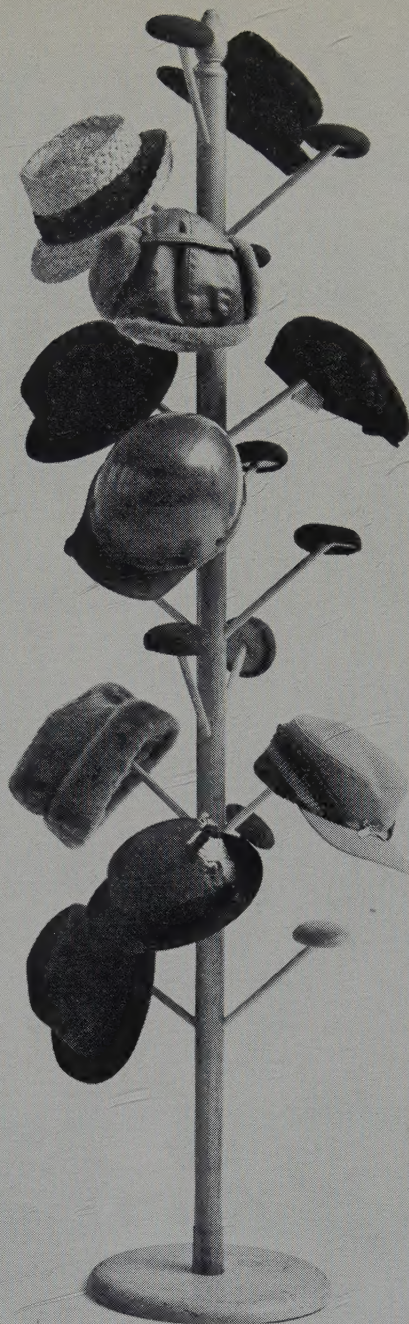
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